

## Inventor

? ds

Set	Items	Description
S1	12	AU=(POMFRETT, C? OR POMFRETT C?)
S2	0	CHRIS?(4N)POMFRETT
S3	219	AU=(MCCANN, H? OR MCCANN H?)
S4	1	HUGH(2N)MCCANN
S5	465523	BRAIN? OR STIMUL? OR IMPED?
S6	9	(S3:S4) AND S5
S7	5	S6 NOT S1

? show files

File 350:Derwent WPIX 1963-2011/UD=201114

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File 65:Inside Conferences 1993-2011/Mar 03

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File 35:Dissertation Abs Online 1861-2011/Jan

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1/5,K/1 (Item 1 from file: 350)

DIALOG(R)File 350: Derwent WPIX

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0021055538 *Drawing available*

WPI Acc no: 2010-M80916/201068

Related WPI Acc No: 2004-795364; 2009-R62597

**Method for monitoring response of nervous system of body to stimulus, involves collecting subset of voltage measurement during measurement period beginning after particular delay following occurrence of stimulus**

Patent Assignee: UNIV MANCHESTER (UYMA-N)

Inventor: DAVIDSON J; MCCANN H; **POMFRETT C J D**; WRIGHT P

Patent Family ( 2 patents, 113 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 2010112825	A2	20101007	WO 2010GB596	A	20100329	201068	B
WO 2010112825	A3	20101125	WO 2010GB596	A	20100329	201077	E

Priority Applications (no., kind, date): US 2009415764 A 20090331; GB 20097983 A 20090509; DE 202009007623 U 20090528

Patent Details					
Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
WO 2010112825	A2	EN	62	16	
National Designated States, Confirmed	AE AG AL AM AO AT AU AZ BA BB BG BH BR BW BY BZ CA CH CL CN CO CR CU CZ DE DK DM DO DZ EC EE EG ES FI GB GD GE GH GM GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LY MA MD ME MG MK MN MW MX MY MZ NA NG NI NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SK SL SM ST SV SY TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW				
WO 2010112825	A3	EN			
National Designated States, Confirmed	AE AG AL AM AO AT AU AZ BA BB BG BH BR BW BY BZ CA CH CL CN CO CR CU CZ DE DK DM DO DZ EC EE EG ES FI GB GD GE GH GM GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LY MA MD ME MG MK MN MW MX MY MZ NA NG NI NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SK SL SM ST SV SY TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW				

#### Alerting Abstract WO A2

**NOVELTY** - The method involves providing multiple electrodes on surface of body and passing current between selected areas of surface of body. The voltage measurements between selected ones of electrodes are collected independently of stimulus application while current is passed between the pair of electrodes. A subset of collected voltage measurements is processed to determine a response of the nervous system to the stimulus. The subset of collected voltage measurements is collected during a measurement period beginning after a particular delay following occurrence stimulus.

**DESCRIPTION - INDEPENDENT CLAIMS** are included for the following:

1. computer program for monitoring the response of nervous system of body to stimulus;
2. apparatus for monitoring response of nervous system of body to stimulus; and
3. tomographic data acquisition apparatus for obtaining tomographic data from human or animal subject.

**USE** - Method for monitoring response of nervous system of body to stimulus, where the stimulus includes auditory evoked stimulus, visually evoked stimulus and physiologically occurring stimulus in heartbeat and breath.

**ADVANTAGE** - Since the voltage measurements between selected ones of electrodes are collected independently of stimulus application, and subset of collected voltage measurements is collected during a measurement period beginning after a particular delay following occurrence stimulus, so that any change in voltage measurement following stimulus application can be reliably attributed to the stimulus, thereby avoiding any risk that the commencement of measurement causes artifacts which affect the collected voltage measurement which lead to incorrect determinations relating to the response of the nervous system.

**DESCRIPTION OF DRAWINGS** - The drawing shows a schematic view of the apparatus for monitoring the response of nervous system of body to stimulus.

101 Subject's head

104 Electrical impedance tomography system  
 105 Current limiting circuit  
 106 Stimulus generator  
 107 Computer

**Title Terms /Index Terms/Additional Words:** METHOD; MONITOR; RESPOND; NERVE; SYSTEM; BODY; STIMULUS; COLLECT; SUBSET; VOLTAGE; MEASURE; PERIOD; BEGIN; AFTER; DELAY; FOLLOW; OCCUR

**Class Codes**

International Patent Classification					
IPC	Class Level	Scope	Position	Status	Version Date
A61B-0005/00	A	I	F	B	20060101
A61B-0005/053	A	I	F	B	20060101
A61B-0005/00	C	I		B	20060101
A61B-0005/053	C	I		B	20060101

**ECLA:** A61B-005/053H

File Segment: EngPI; EPI;

DWPI Class: S01; S05; T01; P31

Manual Codes (EPI/S-X): S01-D01; S05-D01; T01-J06A; T01-S03

...Inventor: **POMFRETT C J D** Original Publication Data by AuthorityArgentina**Publication No.**  
 Inventor name & address:**POMFRETT**, Christopher, John, Douglas... ..**POMFRETT C J D, GB**

1/5,K/2 (Item 2 from file: 350)

DIALOG(R)File 350: Derwent WPI X

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0014613391 *Drawing available*

WPI Acc no: 2004-795364/200478

Related WPI Acc No: 2010-M80916

**Nervous system response monitoring method using electrical impedance tomography, involves collecting voltage measurements between selected areas of human body over predetermined time period after application of stimulus**

Patent Assignee: UMIST VENTURES LTD (UMIS-N); UNIV MANCHESTER (UYMA-N); UNIV VICTORIA MANCHESTER (UYMA-N); MCCANN H (MCCA-I); POMFRETT C J D (POMF-I)

Inventor: MCCANN H; **POMFRETT C J D**

Patent Family ( 7 patents, 107 countries )							
Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 2004093679	A1	20041104	WO 2004GB1565	A	20040413	200478	B
EP 1615550	A1	20060118	EP 2004727037	A	20040413	200606	E
			WO 2004GB1565	A	20040413		
US 20060189883	A1	20060824	WO 2004GB1565	A	20040413	200656	E
			US 2005553745	A	20051018		
EP 1615550	B1	20070321	EP 2004727037	A	20040413	200723	E
			WO 2004GB1565	A	20040413		
DE 602004005438	E	20070503	DE 062004005438	A	20040413	200731	E
			EP 2004727037	A	20040413		
			WO 2004GB1565	A	20040413		
DE 602004005438	T2	20071129	DE 062004005438	A	20040413	200780	E
			EP 2004727037	A	20040413		
			WO 2004GB1565	A	20040413		
US 20100010369	A1	20100114	WO 2004GB1566	A	20040413	201006	E
			US 2005553745	A	20051018		
			US 2009415764	A	20090331		

Priority Applications (no., kind, date): GB 20039049 A 20030422

Patent Details						
Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
WO 2004093679	A1	EN	24	3		
National Designated States,Original	AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW					
Regional Designated States,Original	AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW					
EP 1615550	A1	EN			PCT Application	WO 2004GB1565
					Based on OPI patent	WO 2004093679
Regional Designated States,Original	AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IT LI LT LU LV MC MK NL PL PT RO SE SI SK TR					
US 20060189883	A1	EN			PCT Application	WO 2004GB1565
EP 1615550	B1	EN			PCT Application	WO 2004GB1565
					Based on OPI patent	WO 2004093679
Regional Designated States,Original	DE FR GB					
DE 602004005438	E	DE			Application	EP 2004727037
					PCT Application	WO 2004GB1565
					Based on OPI patent	EP 1615550
					Based on OPI patent	WO 2004093679
DE 602004005438	T2	DE			Application	EP 2004727037
					PCT Application	WO 2004GB1565
					Based on OPI patent	EP 1615550
					Based on OPI patent	WO 2004093679
US 20100010369	A1	EN			C-I-P of application	WO 2004GB1566
					C-I-P of application	US 2005553745

#### Alerting Abstract WO A1

NOVELTY - A set of voltage measurement between selected area on the surface of the human body on supplying current, are collected over a predetermined measurement period after the

application of the stimulus. The collected voltage measurement are compared with reference measurements, to determine normal or abnormal response of the nervous system.

DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

1. an apparatus for monitoring response of nervous system;
2. a method of diagnosing brain dysfunction;
3. a data carrier storing nervous system response monitoring program; and
4. a computer.

USE - For monitoring response of nervous system of human body to defined stimulus such as flash of light before patient's eyes, audible sound adjacent to patient's ears, using electrical impedance tomography (EIT) imaging technique.

ADVANTAGE - Allows relatively faster current injection and voltage measurement so as to allow images to be captured with the required temporal resolution. Allows the general practitioner to quickly and easily assess the need for a patient to be referred to a neurologist.

DESCRIPTION OF DRAWINGS - The figure shows the nervous system response monitoring apparatus.

2 ears

3 nose

**Title Terms** /Index Terms/Additional Words: NERVE; SYSTEM; RESPOND; MONITOR; METHOD; ELECTRIC; IMPEDANCE; TOMOGRAPHY; COLLECT; VOLTAGE; MEASURE; SELECT; AREA; HUMAN; BODY; PREDETERMINED; TIME; PERIOD; AFTER; APPLY; STIMULUS

**Class Codes**

International Patent Classification					
IPC	Class Level	Scope	Position	Status	Version Date
A61B-0005/04	A	I	L		20060101
A61B-0005/04	A	I	L	B	20060101
A61B-0005/0484	A	N		R	20060101
A61B-0005/0484	A	I	F		20060101
A61B-0005/0484	A	I	F	B	20060101
A61B-0005/05	A	I	F	B	20060101
A61B-0005/053	A	I		R	20060101
A61B-0005/04	C	I			20060101
A61B-0005/04	C	I		B	20060101
A61B-0005/04	C	I	L	B	20060101
A61B-0005/0476	C	I			20060101
A61B-0005/0476	C	I		B	20060101
A61B-0005/0476	C	N		R	20060101
A61B-0005/0476	C	I	F	B	20060101
A61B-0005/05	C	I	F	B	20100101
A61B-0005/053	C	I		R	20060101

**ECLA:** A61B-005/053H

**ICO:** K61B-005:0484B, K61B-005:0484D

**US Classification, Current Main:** 600-547000, 600-554000

**US Classification, Issued:** 600547, 600554

File Segment: EngPI; EPI;

DWPI Class: S05; T01; P31

Manual Codes (EPI/S-X): S05-D01D1; S05-D01F; T01-J06A; T01-J10C4B; T01-S03

...Inventor: **POMFRETT C J D** Original Publication Data by AuthorityArgentina**Publication No.**

Inventor name & address **POMFRETT C J D...** **POMFRETT C J D...** **POMFRETT, Christopher John Douglas...** **POMFRETT, Christopher John Douglas...** **Pomfrett, Christopher John Douglas...** **POMFRETT, CHRISTOPHER JOHN DOUGLAS...** **...POMFRETT, Christopher, John, Douglas**

1/5,K/4 (Item 4 from file: 350)

DIALOG(R)File 350: Derwent WPIX

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0008417902

WPI Acc no: 1997-535461/199749

XRAM Acc no: C1997-171167

XRPX Acc No: N1997-445804

**Detecting degenerative brain disease in cows - by measuring the respiratory sinus arrhythmia and determining if it is abnormal**

Patent Assignee: UNIV VICTORIA MANCHESTER (UYMA-N); BTG INT LTD (BTGB)

Inventor: **POMFRETT C**

Patent Family ( 10 patents, 75 countries )							
Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 1997038627	A1	19971023	WO 1997GB1043	A	19970415	199749	B
AU 199725189	A	19971107	AU 199725189	A	19970415	199809	E
EP 897283	A1	19990224	EP 1997916578	A	19970415	199912	E
			WO 1997GB1043	A	19970415		
JP 2001502193	W	20010220	JP 1997536867	A	19970415	200114	E
			WO 1997GB1043	A	19970415		
US 6217521	B1	20010417	WO 1997GB1043	A	19970415	200123	E
			US 1998173736	A	19981016		
AU 736454	B	20010726	AU 199725189	A	19970415	200149	E
EP 897283	B1	20041013	EP 1997916578	A	19970415	200467	E
			WO 1997GB1043	A	19970415		
DE 69731194	E	20041118	DE 69731194	A	19970415	200476	E
			EP 1997916578	A	19970415		
			WO 1997GB1043	A	19970415		
ES 2230599	T3	20050501	EP 1997916578	A	19970415	200532	E
DE 69731194	T2	20051020	DE 69731194	A	19970415	200569	E
			EP 1997916578	A	19970415		
			WO 1997GB1043	A	19970415		

Priority Applications (no., kind, date): GB 19967970 A 19960417; GB 199623759 A 19961115; GB 19974300 A 19970301; WO 1997GB1043 A 19970415



Patent Details						
Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
WO 1997038627	A1	EN	28	11		
National Designated States, Original	AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH HU IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK TJ TM TR TT UA UG US UZ VN YU					
Regional Designated States, Original	AT BE CH DE DK EA ES FI FR GB GH GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG					
AU 199725189	A	EN			Based on OPI patent	WO 1997038627
EP 897283	A1	EN			PCT Application	WO 1997GB1043
					Based on OPI patent	WO 1997038627
Regional Designated States, Original	AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE					
JP 2001502193	W	JA	25		PCT Application	WO 1997GB1043
					Based on OPI patent	WO 1997038627
US 6217521	B1	EN			Continuation of application	WO 1997GB1043
AU 736454	B	EN			Previously issued patent	AU 9725189
					Based on OPI patent	WO 1997038627
EP 897283	B1	EN			PCT Application	WO 1997GB1043
					Based on OPI patent	WO 1997038627
Regional Designated States, Original	AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE					
DE 69731194	E	DE			Application	EP 1997916578
					PCT Application	WO 1997GB1043
					Based on OPI patent	EP 897283
					Based on OPI patent	WO 1997038627
ES 2230599	T3	ES			Application	EP 1997916578
					Based on OPI patent	EP 897283
DE 69731194	T2	DE			Application	EP 1997916578
					PCT Application	WO 1997GB1043
					Based on OPI patent	EP 897283
					Based on OPI patent	WO 1997038627

**Alerting Abstract WO A1**

A method for estimating the probability that a mammal is suffering from a degenerative brain disease, in which a measurement is made of the respiratory sinus arrhythmia (RSA) of the mammal, and it is assumed that the mammal is suffering from a degenerative brain disease if the measured RSA is abnormal.

Also claimed are: (B) a degenerative brain disease monitoring apparatus comprising a device for measuring the RSA of a mammal, and a device for producing an output indicating that the mammal is suffering from a degenerative brain disease if the measured RSA is abnormal; (C) an animal carcass selection apparatus, comprising a device for monitoring the RSA of animals prior to slaughter, and a device for generating an output representing whether or not individual animals have normal RSA, the output being used to enable the selection of carcasses of only those animals for which the output indicates normal RSA; (D) a selection apparatus for selecting animals for slaughter, comprising a device for monitoring RSA of the animals, and a device for producing an output indicating which animals have an abnormal measured RSA to enable the slaughter of such animals.

USE - The methods can be used for assessing animals such as cattle for degenerative brain diseases especially BSE without it being necessary to slaughter the animal. The method can also be applied to other degenerative brain disease where lesions are formed progressively in the brain.

**Title Terms /Index Terms/Additional Words:** DETECT; DEGENERATE; BRAIN; DISEASE; COW; MEASURE; RESPIRATION; SINUS; ARRHYTHMIC; DETERMINE; ABNORMAL

**Class Codes**

International Patent Classification					
IPC	Class Level	Scope	Position	Status	Version Date
A61B-005/0245			Main		"Version 7"
A61B-0005/0245	A	I		R	20060101
A61B-0005/024	C	I		R	20060101

**ECLA:** A61B-005/0245

**US Classification, Current Main:** 600-484000; Secondary: 452-052000, 600-513000

**US Classification, Issued:** 600513, 45252, 600484

**Japan National Classification FI Terms**

FI Term	Facet	Rank	Type
A61B-005/02 321 T			

**Japan National Classification F Terms**

Theme	ViewPoint + Figure	Additional Code
4C017		
4C017	AA14	
4C017	AA19	
4C017	AA20	

DWPI Class: B04; C07; D12; P31

Manual Codes (CPI/A-N): B11-C08E; B12-K04A; C11-C08E; C12-K04A; D02-A

Inventor: **POMFRETT C** Original Publication Data by AuthorityArgentina**Publication No.** Inventor name & address:**POMFRETT C**...**POMFRETT C**...**POMFRETT, Christopher, 17 Manifold Close, Elworth, Sandbach, Cheshire CW11 0XQ, GB**...**POMFRETT, Christopher**...**POMFRETT C**...**Pomfrett, Christopher**...**POMFRETT, CHRISTOPHER, GB**

1/5,K/5 (Item 5 from file: 350)

DIALOG(R)File 350: Derwent WPIX

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0006197553 *Drawing available*

WPI Acc no: 1992-166819/199220

XRFX Acc No: N1992-124733

**Anaesthesia depth monitoring method - compares measurement and reference values derived from circular statistical vector analysis of R-waves using Rayleigh randomness test**

Patent Assignee: UNIV VICTORIA MANCHESTER (UYMA-N)

Inventor: **POMFRETT C J D**

**Patent Family ( 24 patents, 53 countries )**

<b>Patent Number</b>	<b>Kind</b>	<b>Date</b>	<b>Application Number</b>	<b>Kind</b>	<b>Date</b>	<b>Update</b>	<b>Type</b>
WO 1992006632	A1	19920430	WO 1991GB1807	A	19911016	199220	B
AU 199187184	A	19920520	AU 199187184	A	19911016	199233	E
			WO 1991GB1807	A	19911016		
ZA 199108339	A	19920729	ZA 19918339	A	19911018	199236	E
FI 199301742	A	19930526	WO 1991GB1807	A	19911016	199330	E
			FI 19931742	A	19930416		
EP 553162	A1	19930804	EP 1991917976	A	19911016	199331	E
			WO 1991GB1807	A	19911016		
NO 199301392	A	19930608	WO 1991GB1807	A	19911016	199336	E
			NO 19931392	A	19930415		
PT 99257	A	19931029	PT 99257	A	19911017	199346	E
CZ 199300650	A3	19931117	CZ 1993650	A	19911016	199402	E
AU 645855	B	19940127	AU 199187184	A	19911016	199410	E
JP 6501865	W	19940303	JP 1991516503	A	19911016	199414	E
			WO 1991GB1807	A	19911016		
HU 64811	T	19940328	WO 1991GB1807	A	19911016	199417	E
			HU 19931110	A	19911016		
SK 199300361	A3	19930811	SK 1993361	A	19930419	199418	E
US 5372140	A	19941213	WO 1991GB1807	A	19911016	199504	E
			US 199339122	A	19930213		
CZ 281503	B6	19961016	CZ 1993650	A	19911016	199648	E
EP 553162	B1	19970528	EP 1991917976	A	19911016	199726	E
			WO 1991GB1807	A	19911016		
DE 69126315	E	19970703	DE 69126315	A	19911016	199732	E
			EP 1991917976	A	19911016		
			WO 1991GB1807	A	19911016		
ES 2102408	T3	19970801	EP 1991917976	A	19911016	199737	E
IE 80495	B	19980812	IE 19913643	A	19911017	199846	E
SK 279369	B6	19981007	WO 1991GB1807	A	19911016	199850	E
			SK 1993361	A	19911016		
HU 215658	B	19990301	WO 1991GB1807	A	19911016	199916	E
			HU 19931110	A	19911016		
FI 102872	B1	19990315	WO 1991GB1807	A	19911016	199918	E
			FI 19931742	A	19930416		
CA 2094288	C	19990525	CA 2094288	A	19911016	199939	E
			WO 1991GB1807	A	19911016		
JP 3065660	B2	20000717	JP 1991516503	A	19911016	200039	E
			WO 1991GB1807	A	19911016		
NO 308094	B1	20000724	WO 1991GB1807	A	19911016	200042	E
			NO 19931392	A	19930415		

Priority Applications (no., kind, date): GB 199022623 A 19901018; WO 1991GB1807 A 19911016

**Patent Details**

<b>Patent Number</b>	<b>Kind</b>	<b>Lang</b>	<b>Pgs</b>	<b>Draw</b>	<b>Filing Notes</b>	
WO 1992006632	A1	EN	17	9		
National Designated States,Original	AT AU BB BG BR CA CH CS DE DK ES FI GB HU JP KP KR LK LU MC MG MN MW NL NO PL RO SD SE SU US					
Regional Designated States,Original	AT BE BF BJ CF CG CH CI CM DE DK ES FR GA GB GN GR IT LU ML MR NL SE SN TD TG					
AU 199187184	A	EN			PCT Application	WO 1991GB1807
					Based on OPI patent	WO 1992006632
ZA 199108339	A	EN	19			
FI 199301742	A	FI			PCT Application	WO 1991GB1807
EP 553162	A1	EN	2	1	PCT Application	WO 1991GB1807
					Based on OPI patent	WO 1992006632
Regional Designated States,Original	AT BE CH DE DK ES FR GB GR IT LI LU NL SE					
NO 199301392	A	NO			PCT Application	WO 1991GB1807
AU 645855	B	EN			Previously issued patent	AU 9187184
					Based on OPI patent	WO 1992006632
JP 6501865	W	JA			PCT Application	WO 1991GB1807
					Based on OPI patent	WO 1992006632
HU 64811	T	HU			PCT Application	WO 1991GB1807
					Based on OPI patent	WO 1992006632
US 5372140	A	EN	13	9	PCT Application	WO 1991GB1807
					Based on OPI patent	WO 1992006632
CZ 281503	B6	CS			Previously issued patent	CZ 9300650
EP 553162	B1	EN	12	9	PCT Application	WO 1991GB1807
					Based on OPI patent	WO 1992006632
Regional Designated States,Original	AT BE CH DE DK ES FR GB GR IT LI LU NL SE					
DE 69126315	E	DE			Application	EP 1991917976
					PCT Application	WO 1991GB1807
					Based on OPI patent	EP 553162
					Based on OPI patent	WO 1992006632
ES 2102408	T3	ES			Application	EP 1991917976
					Based on OPI patent	EP 553162
IE 80495	B	EN				
SK 279369	B6	SK			PCT Application	WO 1991GB1807
					Previously issued patent	SK 9300361
HU 215658	B	HU			PCT Application	WO 1991GB1807
					Previously issued patent	HU 64811
					Based on OPI patent	WO 1992006632

**Alerting Abstract WO A1**

A series of R waves are analysed to determine the position in time of each R wave relative to the respiratory cycle in which it occurs. The position of the R wave is determined on a normalised unit of respiratory waveform with each wave resolved as a vector with angle and magnitude representing the portion of the R wave in the respiratory cycle.

A measurement value is obtained from the mean vector length and the Rayleigh test for randomness is applied to determine a reference vector length corresponding to a predetermined significance level for clustering of the R waves. Comparison of the measurement and reference values gives a measure of the depth of the anaesthesia.

ADVANTAGE - Measures sinus arrhythmia to provide real time indication of the depth of anaesthesia, and prevent possibility of patients being aware of their surroundings under anaesthetics.

**Title Terms /Index Terms/Additional Words:** ANAESTHETIC; DEPTH; MONITOR; METHOD; COMPARE ; MEASURE; REFERENCE; VALVE; DERIVATIVE; CIRCULAR; STATISTICAL; VECTOR; ANALYSE; WAVE; RAYLEIGH; RANDOM; TEST

**Class Codes**

International Patent Classification					
IPC	Class Level	Scope	Position	Status	Version Date
A61B-005/0205			Main		"Version 7"
A61B-0005/0205	A	I		R	20060101
A61B-0005/0402	A	I	F	R	20060101
A61B-0005/0456	A	I	L	R	20060101
A61B-0005/0468	A	I		R	20060101
A61B-0005/08	A	I		R	20060101
A61B-0005/11	A	I		R	20060101
A61M-0016/01	A	I	L	R	20060101
A61M-0016/10	A	I		R	20060101
A61B-0005/0205	C	I		R	20060101
A61B-0005/0402	C	I	F	R	20060101
A61B-0005/0452	C	I	L	R	20060101
A61B-0005/08	C	I		R	20060101
A61B-0005/11	C	I		R	20060101
A61M-0016/01	C	I	L	R	20060101
A61M-0016/10	C	I		R	20060101

**ECLA:** A61B-005/0205, A61B-005/08R, A61B-005/11H4, A61M-016/10B

**US Classification, issued:** 128700, 128671

Japan National Classification FI Terms			
FI Term	Facet	Rank	Type
A61B-005/04 310 M			
A61B-005/04 312 R			
A61B-005/08			
A61M-016/01 G			

Japan National Classification F Terms		
Theme	ViewPoint + Figure	Additional Code
4C027		
4C038		
4C103		
4C027	AA02	
4C027	BB05	
4C027	FF00	
4C027	FF01	
4C027	GG02	
4C027	GG05	
4C027	GG15	
4C027	HH03	
4C027	HH11	
4C027	KK03	
4C038	SS00	
4C038	SS08	
4C038	ST09	
4C038	SU01	
4C038	SV00	
4C038	SX07	

File Segment: EngPI; EPI;  
DWPI Class: S05; P31; P34  
Manual Codes (EPI/S-X): S05-L

Inventor: **POMFRETT C J D** Original Publication Data by AuthorityArgentina**Publication No.**  
Inventor name & address:**POMFRETT C J D...**...**POMFRETT C J D...**...**POMFRETT C J D...**  
...**POMFRETT C J D...**...**POMFRETT C J D...**...**POMFRETT C J D...**...**POMFRETT,**  
**Christopher John Douglas, 17 Manifold Close, Elsworth, Sandbach, Cheshire CW11 0XQ,**  
**GB...**...**POMFRETT, Christopher John Douglas, 17 Manifold Close, Elsworth, Sandbach,**  
**Cheshire CW11 0XQ, GB...**...**POMFRETT C J D...**...**POMFRETT C J D...**...**POMFRETT C J**  
**D...**...**POMFRETT C J D...**...**POMFRETT C J D...**...**POMFRETT C J D...**...**POMFRETT C J D...**  
...**POMFRETT C J D...**...**POMFRETT C J D...**...**POMFRETT C J D...**...**POMFRETT C J D...**  
...**Pomfrett, Christopher J. D...**...**POMFRETT, CHRISTIPHOR, JOHN, DOUGLAS, GB...**  
...**POMFRETT C J D**

1/5,K/6 (Item 1 from file: 65)  
DIALOG(R)File 65: Inside Conferences  
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0006518105 **Inside Conference Item ID:** CN067344532

**Predicted EIT current densities in the brain using a 3D anatomically realistic model of the head**

Davidson, J.L.; **Pomfrett, C.J.D.**; McCann, H.

**Conference:** International Conference on Electrical Bio-impedance; and the 8th Conference on Electrical Impedance Tomography: ICEBI 2007, August 29th-September 2nd 2007, Graz, Austria / - 13th



IFMBE PROCEEDINGS , 2007; VOL 17 P: 376-379

Berlin, New York, Springer, c2007

ISSN: 1680-0737 ISBN: 3540738401

Language: English Document Type: Conference Papers

Editor: Scharfetter, Hermann; Merwa, Robert

Location: Graz, Austria

2007; Aug ( 200708 ) ( 200708 )

British Library Item Location: 4363.315960

Note:

Held as a joint conference. Includes bibliographical references and indexes

Descriptors: Electric Impedance; Biotechnology; Models, Biological; Tomography; Electrical bioimpedance; Impedance tomography Davidson, J.L.; Pomfrett, C.J.D.; McCann, H.

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1/5,K/7 (Item 2 from file: 65)

DIALOG(R)File 65: Inside Conferences

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05146015 Inside Conference Item ID: CN053561571

**Sub-Second Observations of EIT Voltage Changes on the Human Scalp Due to Brain Stimulus**

Murrieta-Lee, J. C.; Pomfrett, C. J. D.; Beatty, P. C. W.; Polydorides, N.; Mussel, C. B.; Waterfall, R. C.; McCann, H.

Conference: IEEE Engineering in Medicine and Biology Society - 26th; Annual international conference

PROCEEDINGS OF THE ANNUAL INTERNATIONAL CONFERENCE-IEEE ENGINEERING IN MEDICINE AND BIOLOGY SOCIETY , 2004; 26TH; VOL 2 P: 1317-1320

Piscataway, N.J.; IEEE., 2004

ISSN: 1094-687X ISBN: 0780384393

Language: English Document Type: Conference Preprinted papers

Sponsor: IEEE Engineering in Medicine and Biology Society

Location: San Francisco, CA

2004; Sep ( 200409 ) ( 200409 )

British Library Item Location: 6841.187030

Descriptors: Engineering; Medicine; Biology; IEEE; EMBS Murrieta-Lee, J. C.; Pomfrett, C. J. D.; Beatty, P. C. W.; Polydorides, N.; Mussel, C. B.; Waterfall, R. C.; McCann, H.

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1/5,K/8 (Item 3 from file: 65)

DIALOG(R)File 65: Inside Conferences

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03750894 Inside Conference Item ID: CN039439219

**Respiratory sinus arrhythmia as an index of anaesthetic depth: evidence from functional imaging studies**

Pomfrett, C. J. D.; Alkire, M. T.

Conference: Memory and awareness in anaesthesia - International symposium; 4th P: 350-351

London, Imperial College Press, c2000

ISBN: 1860942229

Language: English Document Type: Conference Papers and abstracts

Editor: Jordan, C.; Vaughan, D. J. A.; Newton, D. E. F.

Location: London

1998 ( 1998 ) ( 1998 )

British Library Item Location: m01/22960

Note:

Also known as MAA98

**Descriptors:** memory in anaesthesia; MAA; awareness in anaesthesia; anaesthesia **Pomfrett, C. J. D.; Alkire, M. T.**

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1/5,K/9 (Item 4 from file: 65)  
DIALOG(R)File 65: Inside Conferences  
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02081116 **Inside Conference Item ID:** CN021810029  
**Toward a Monitor of Depth: Bispectral Index (BIS) and Respiratory Sinus Arrhythmia (RSA)**  
**Both Monitor Cerebral Metabolic Reduction during Isoflurane Anesthesia**

Alkire, M.; **Pomfrett, C.**  
**Conference:** American Society of Anesthesiologists - Annual meeting  
ANESTHESIOLOGY-PHILADELPHIA THEN HAGERSTOWN- , 1997; VOL 87; NUMBER  
3/SUP P: A421  
Lippincott-Raven, 1997  
**ISSN:** 0003-3022

**Language:** English **Document Type:** Conference Preprinted abstracts  
**Sponsor:** American Society of Anesthesiologists  
**Location:** San Diego, CA  
**Date:** Oct 1997 ( 199710 ) ( 199710 )  
**British Library Item Location:** 0900.600000  
**Descriptors:** anesthesiologists Alkire, M.; **Pomfrett, C.**

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1/5,K/10 (Item 5 from file: 65)  
DIALOG(R)File 65: Inside Conferences  
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01836985 **Inside Conference Item ID:** CN018981009  
**EEG monitoring using bispectral analysis**

**Pomfrett, C. J. D.**  
**Conference:** New measurements and techniques in intensive care - Colloquium  
COLLOQUIUM DIGEST-IEE , 1996; ISSUE 179 P: 5  
IEE, 1996  
**ISSN:** 0963-3308

**Language:** English **Document Type:** Conference Selected preprints and provisional programme  
**Sponsor:** IEE Professional Group S9 (Biomedical Engineering)  
IEE Professional Group J1 (Instrumentation and Measurement Systems)  
Institute of Healthcare Engineering and Estate Management  
**Location:** London  
**Date:** Dec 1996 ( 199612 ) ( 199612 )  
**British Library Item Location:** 3315.470000  
**Descriptors:** intensive care; IEE; biomedical engineering; instrumentation; measurement systems; healthcare engineering **Pomfrett, C. J. D.**

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1/5,K/11 (Item 6 from file: 65)  
DIALOG(R)File 65: Inside Conferences  
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01631183 **Inside Conference Item ID:** CN016162993  
**Toward the Fundamental Unit of Anesthetic Depth: Positron Emission Tomography**  
**Evidence Suggests Bispectral Index (BIS) Monitors an Important Component of Anesthetic Depth**

Alkire, M.; **Pomfrett, C.**  
**Conference:** American Society of Anesthesiologists - Annual meeting  
ANESTHESIOLOGY - PHILADELPHIA THEN HAGERSTOWN- , 1996; VOL 85; NUMBER  
3/SUP P: A174  
Lippincott-Raven, 1996  
**ISSN:** 0003-3022  
**Language:** English **Document Type:** Conference Preprinted abstracts and programme  
**Location:** New Orleans, LA  
**Date:** Oct 1996 ( 199610 ) ( 199610 )  
**British Library Item Location:** 0900.600000  
**Descriptors:** anesthesiologists Alkire, M.; **Pomfrett, C.**

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1/5,K/12 (Item 7 from file: 65)  
DIALOG(R)File 65: Inside Conferences  
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01627290 **Inside Conference Item ID:** CN016162993  
**Toward the Fundamental Unit of Anesthetic Depth: Positron Emission Tomography  
Evidence Suggests Bispectral Index (BIS) Monitors an Important Component of Anesthetic  
Depth**  
Alkire, M.; **Pomfrett, C.**  
**Conference:** American Society of Anesthesiologists - Annual meeting  
ANESTHESIOLOGY - PHILADELPHIA THEN HAGERSTOWN- , 1996; VOL 85; NUMBER  
3/SUP P: A174  
Lippincott-Raven, 1996  
**ISSN:** 0003-3022  
**Language:** English **Document Type:** Conference Preprinted abstracts and programme  
**Location:** New Orleans, LA  
**Date:** Oct 1996 ( 199610 ) ( 199610 )  
**British Library Item Location:** 0900.600000  
**Descriptors:** anesthesiologists Alkire, M.; **Pomfrett, C.**

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7/5,K/1 (Item 1 from file: 65)  
DIALOG(R)File 65: Inside Conferences  
(c) 2011 BLDSC all rts. reserv. All rights reserved.

0006518107 **Inside Conference Item ID:** CN067344556  
**Conversion of EIT brain images for co-registration**  
McCormick, D.; Davidson, J.L.; **McCann, H.**  
**Conference:** International Conference on Electrical Bio-impedance; and the 8th Conference on  
Electrical Impedance Tomography: ICEBI 2007, August 29th-September 2nd 2007, Graz, Austria  
/ - 13th  
IFMBE PROCEEDINGS , 2007; VOL 17 P: 384-387  
Berlin, New York, Springer, c2007  
**ISSN:** 1680-0737 **ISBN:** 3540738401  
**Language:** English **Document Type:** Conference Papers  
**Editor:** Scharfetter, Hermann; Merwa, Robert  
**Location:** Graz, Austria  
2007; Aug ( 200708 ) ( 200708 )  
**British Library Item Location:** 4363.315960  
**Note:**  
Held as a joint conference. Includes bibliographical references and indexes  
**Descriptors:** Electric **Impedance**; Biotechnology; Models, Biological; Tomography ; Electrical  
bioimpedance; **Impedance** tomography  
**Conversion of EIT brain images for co-registration**

McCormick, D.; Davidson, J.L.; **McCann, H.**

**Descriptors:** Electric **Impedance**; Biotechnology; Models, Biological; Tomography ; Electrical bioimpedance; **Impedance** tomography

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7/5,K/2 (Item 2 from file: 65)

DIALOG(R)File 65: Inside Conferences

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0006518092 **Inside Conference Item ID:** CN067344401

**Low-Noise Measurement for Electrical Impedance Tomography**

Rafiei-Naeini, M.; Wright, P.; **McCann, H.**

**Conference:** International Conference on Electrical Bio-impedance; and the 8th Conference on Electrical Impedance Tomography: ICEBI 2007, August 29th-September 2nd 2007, Graz, Austria / - 13th

IFMBE PROCEEDINGS , 2007; VOL 17 P: 324-327

Berlin, New York, Springer, c2007

**ISSN:** 1680-0737 **ISBN:** 3540738401

**Language:** English **Document Type:** Conference Papers

**Editor:** Scharfetter, Hermann; Merwa, Robert

**Location:** Graz, Austria

2007; Aug ( 200708 ) ( 200708 )

**British Library Item Location:** 4363.315960

**Note:**

Held as a joint conference. Includes bibliographical references and indexes

**Descriptors:** Electric **Impedance**; Biotechnology; Models, Biological; Tomography ; Electrical bioimpedance; **Impedance** tomography

**Low-Noise Measurement for Electrical Impedance Tomography**

Rafiei-Naeini, M.; Wright, P.; **McCann, H.**

**Descriptors:** Electric **Impedance**; Biotechnology; Models, Biological; Tomography ; Electrical bioimpedance; **Impedance** tomography

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7/5,K/3 (Item 3 from file: 65)

DIALOG(R)File 65: Inside Conferences

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04495577 **Inside Conference Item ID:** CN047023385

**Considerations in Electrical Impedance Imaging**

Polydorides, N.; Lionheart, W. R. B.; **McCann, H.**

**Conference:** Industrial process tomography - World congress; 2nd

WORLD CONGRESS ON INDUSTRIAL PROCESS TOMOGRAPHY , 2001; 2ND P: 387-394

Virtual Centre for Industrial Process Tomography, 2001

**ISBN:** 0853162247

**Language:** English **Document Type:** Conference Papers

**Sponsor:** Virtual Centre for Industrial Process Tomography

**Location:** Hannover, German

2001; Aug ( 200108 ) ( 200108 )

**British Library Item Location:** 9353.442900V

**Note:**

CD-ROM in pocket attached to inside back cover

**Descriptors:** industrial process; tomography

**Considerations in Electrical Impedance Imaging**

Polydorides, N.; Lionheart, W. R. B.; **McCann, H.**

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7/5,K/4 (Item 4 from file: 65)  
DIALOG(R)File 65: Inside Conferences  
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04245115 **Inside Conference Item ID:** CN044538556

**Krylov Subspace Iterative Techniques: On the Detection of Brain Activity With Electrical Impedance Tomography**

Polydorides, N.; Lionheart, W. R. B.; **McCann, H.**

**Conference:** Electrical impedance imaging; Special issue on electrical impedance tomography - Conference

IEEE TRANSACTIONS ON MEDICAL IMAGING , 2002; VOL 21; NO 6 P: 596-603  
IEEE, 2002

**ISSN:** 0278-0062

**Language:** English **Document Type:** Conference Selected papers

**Sponsor:** IEEE

2002 ( 2002 ) ( 2002 )

**British Library Item Location:** 4363.204500

**Descriptors:** electrical impedance imaging; EII; IEEE

**Krylov Subspace Iterative Techniques: On the Detection of Brain Activity With Electrical Impedance Tomography**

Polydorides, N.; Lionheart, W. R. B.; **McCann, H.**

**Descriptors:** electrical impedance imaging; EII; IEEE

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7/5,K/5 (Item 5 from file: 65)  
DIALOG(R)File 65: Inside Conferences  
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03718183 **Inside Conference Item ID:** CN039115062

**Sensitivity analysis of different sensing strategies for electrical impedance imaging of two-phase flows (4188-23)**

Figueiroa, T. P.; Seleglim, P.

**Conference:** Process imaging for automatic control - Technical conference

PROCEEDINGS-SPIE THE INTERNATIONAL SOCIETY FOR OPTICAL ENGINEERING ,  
2001; VOL 4188 P: 159-167

SPIE, 2001

**ISSN:** 0277-786X **ISBN:** 0819438537

**Language:** English **Document Type:** Conference Papers

**Editor:** **McCann, H.**; Scott, D. M.

**Sponsor:** International Society for Optical Engineering

**Location:** Boston, MA

2000; Nov ( 200011 ) ( 200011 )

**British Library Item Location:** 6823.100000

**Note:**

Held as part of the SPIE Intelligent systems and advanced manufacturing symposium

**Descriptors:** process imaging; automatic control; SPIE; optical engineering; intelligent systems; advanced manufacturing

**Sensitivity analysis of different sensing strategies for electrical impedance imaging of two-phase flows (4188-23)**

**Editor:** **McCann, H.**; Scott, D. M.